

NOVEMBER/DECEMBER 2025

**23USEL13 — ELECTRONIC
COMMUNICATION SYSTEMS (SEC)**

Time : Three hours

Maximum : 75 marks

SECTION A — ($10 \times 2 = 20$ marks)

Answer ALL questions.

1. Define antenna efficiency.
2. List any two applications of a parabolic antenna.
3. Define ground wave propagation.
4. What is skip distance?
5. What is the need of modulation?
6. Write the expression of AM wave.
7. Define frequency modulation.
8. List two applications of FM.
9. What is pulse modulation?
10. Expand PAM, PWM and PPM.



SECTION B — ($5 \times 5 = 25$ marks)

Answer ALL questions.

11. (a) Explain the concept of bandwidth and beam width in antenna.

Or

- (b) Describe the different types of dish antenna and their applications.

12. (a) Write short note on sky wave propagation.

Or

- (b) Explain space wave propagation.

13. (a) Write short note on super heterodyne receiver.

Or

- (b) Discuss the types of modulations.

14. (a) Compare AM and FM.

Or

- (b) Derive the expression for an FM wave.

15. (a) Explain the Pulse Amplitude Modulation (PAM) with diagram.

Or

- (b) Write short note on Pulse Code Modulation (PCM).

SECTION C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Explain the construction and working of a Yagi-Uda antenna with neat diagram.

17. Discuss the detail different modes of wave propagation.

18. Explain the principle of amplitude modulation with mathematical expression and waveform.

19. With neat diagram, explain the FM transmitter.

20. Describe the Pulse Width Modulation.

